

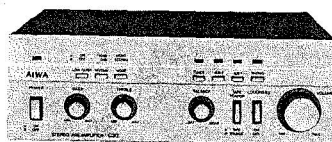
FM/AM STEREO TUNER**MODEL NO. ST-R30E,K,G****STEREO PREAMPLIFIER****MODEL NO. SA-C30E,K,G****DC STEREO POWER AMPLIFIER MODEL NO. SA-P30E,K,G****AIWA®****[SERVICE MANUAL]**

DATE OF ISSUE 7/1980

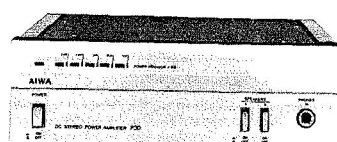
Code No. 15-300-000-36

**ST-R30**

Code No. 16-300-000-36

**SA-C30**

Code No. 17-300-000-36

**SA-P30****SPECIFICATIONS**

Semiconductors: 4 ICs, 2 FETs, 28 transistors (E,K model), 24 transistors (G model), 22 diodes, 6 LEDs, 4-LED digit numerical display

Power source: 220V (E model) 240V (K,G model) 50/60 Hz

Power consumption: 7W

Dimensions: 250(W) x 71(H) x 255.5(D) mm

Weight: 2.2 kg

< FM SECTION >

Frequency range: 87.3 ~ 108.5 MHz

Intermediate frequency: 10.7 ± 0.1 MHz

Usable sensitivity: 7 ± 2 dB (at 88 MHz) 6 ± 2 dB (at 98, 108 MHz)

S/N 50 dB sensitivity: 13 ± 2 dB (at 88, 98, 108 MHz)

S/N ratio: More than 65 dB

Distortion: Less than 0.2%

Frequency response: 30 ~ 15,000 Hz $\begin{pmatrix} +0.5 \\ -1.5 \end{pmatrix}$ dB

Image interference ratio: More than 40 dB

IF interference ratio: More than 65 dB

Capture ratio: Less than 2 dB

AM suppression ratio: More than 50 dB

Selectivity: 68 ± 4 dB (±400 kHz)

Stereo separation: More than 43 dB (at 1 kHz) More than 38 dB (at 100 Hz, 6 kHz)

Muting sensitivity: 16 ± 6 dB

< AM SECTION >

Frequency range: MW: 515 ~ 1650 kHz LW: 145 ~ 360 kHz 455 ± 3 kHz (E,G model) 460 ± 3 kHz (K model)

Sensitivity: MW: 53 ± 3 dB (600 kHz) 51 ± 3 dB (1000, 1400 kHz) LW: 62 ± 3 dB (160 kHz) 60 ± 3 dB (250, 350 kHz)

S/N ratio: MW: 42 ± 5 dB LW: 39 ± 3 dB

Distortion: Less than 1.2%

Image interference ratio: More than 40 dB

Selectivity: 32 ± 5 dB (± 9 kHz)

IF interference ratio: More than 30 dB

SPECIFICATIONS

Semiconductors: 2 ICs, 10 transistors, 10 diodes, 5 LEDs

Power source: 220V (E model) 240V (K,G model) 50/60 Hz

Power consumption: 5W

Dimensions: 250(W) x 71(H) x 229.5(D) mm

Weight: 1.85 kg

S/N ratio: More than 82 dB (Weighted)

Distortion: tuner More than 93 dB aux 1,2 More than 93 dB tape in More than 93 dB

Frequency response: Less than 0.1% (20 Hz ~ 20 kHz)

Tone controls: 20 ~ 20,000 Hz (± 0.5 dB) Bass 100 Hz +9 ± 2 dB -9 ± 2 dB Treble 10 kHz +7 ± 2 dB -7 ± 2 dB

Loudness: 100 Hz +6.5 ± 1 dB 10 kHz +3.5 ± 1 dB 30 Hz -3 ± 1 dB

Low filter: 30 Hz

Channel separation: phono More than 50 dB tuner More than 50 dB aux 1,2

Input sensitivity and impedance: phono 2.5mV (200 mV max input) tuner 150mV/47 kΩ aux 1,2 150mV/47 kΩ

Tape monitor: play 150mV/47 kΩ recout 150mV/47 kΩ

Output level: 870 ± 50 mV (phono -52 dB in) 870 ± 50 mV (tuner, aux 1,2 -16.5 dB in)

Residual noise: phono Less than -83 dB tuner Less than -94 dB aux 1,2

SPECIFICATIONS

Semiconductors: 4 ICs, 2 FETs, 10 transistors, 25 diodes, 6 LEDs

Power source: 220V (E model) 240V (K,G model) 50/60 Hz

Power consumption: 240W

Dimensions: 250(W) x 71(H) x 218(D) mm

Weight: 4.1 kg

Power output: 35W + 35W (4Ω, 0.1% distortion, 20 Hz ~ 20 kHz) (E model) 35W + 35W (8Ω, 0.03% distortion, 20 Hz ~ 20 kHz) (K,G model) Less than 0.02% (E model) Less than 0.01% (K,G model) More than 105 dB (E model) More than 112 dB (K,G model)

Distortion: 10 ~ 100,000 Hz (More than -3 dB) 5 ~ 60,000 Hz (Distortion: 0.12%) (E model) (Distortion: 0.1%) (K,G model) Less than 0.5mV

S/N ratio: (1 kHz, IHF A curve) More than 105 dB (E model) More than 112 dB (K,G model)

Frequency response: 10 ~ 100,000 Hz (More than -3 dB)

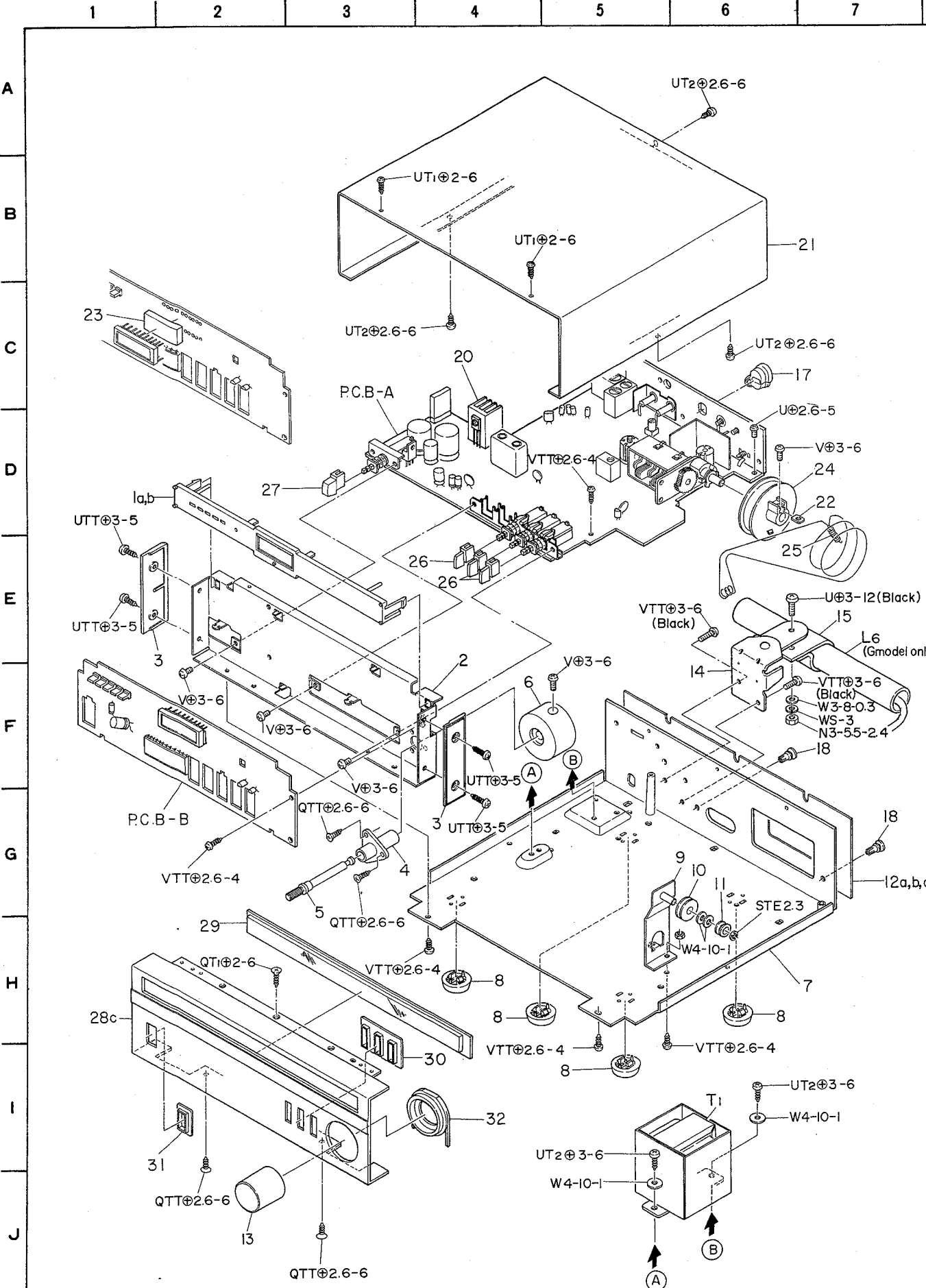
Power bandwidth: 5 ~ 60,000 Hz (Distortion: 0.12%) (E model) (Distortion: 0.1%) (K,G model) Less than 0.5mV

Residual noise: phones More than 0.85mW ± 1 dB

Output voltage: phones More than 0.85mW ± 1 dB

• Specifications and external appearance are subject to change without notice due to product improvement.

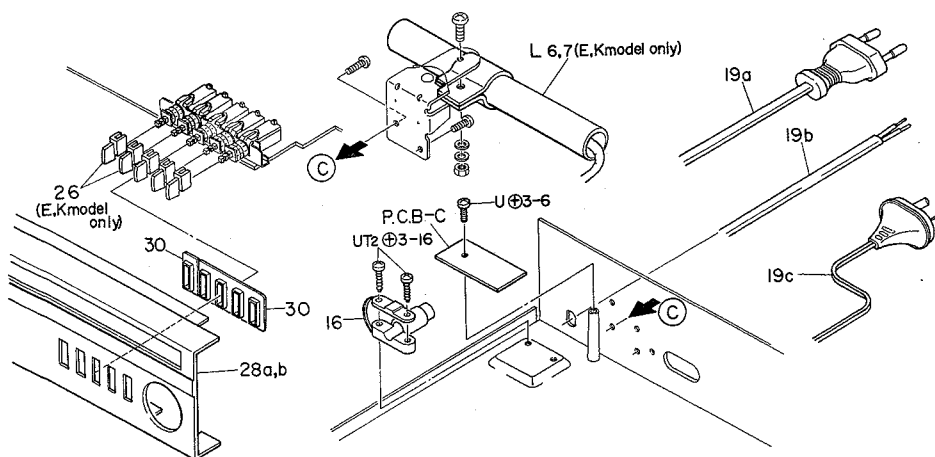
EXPLODED VIEW



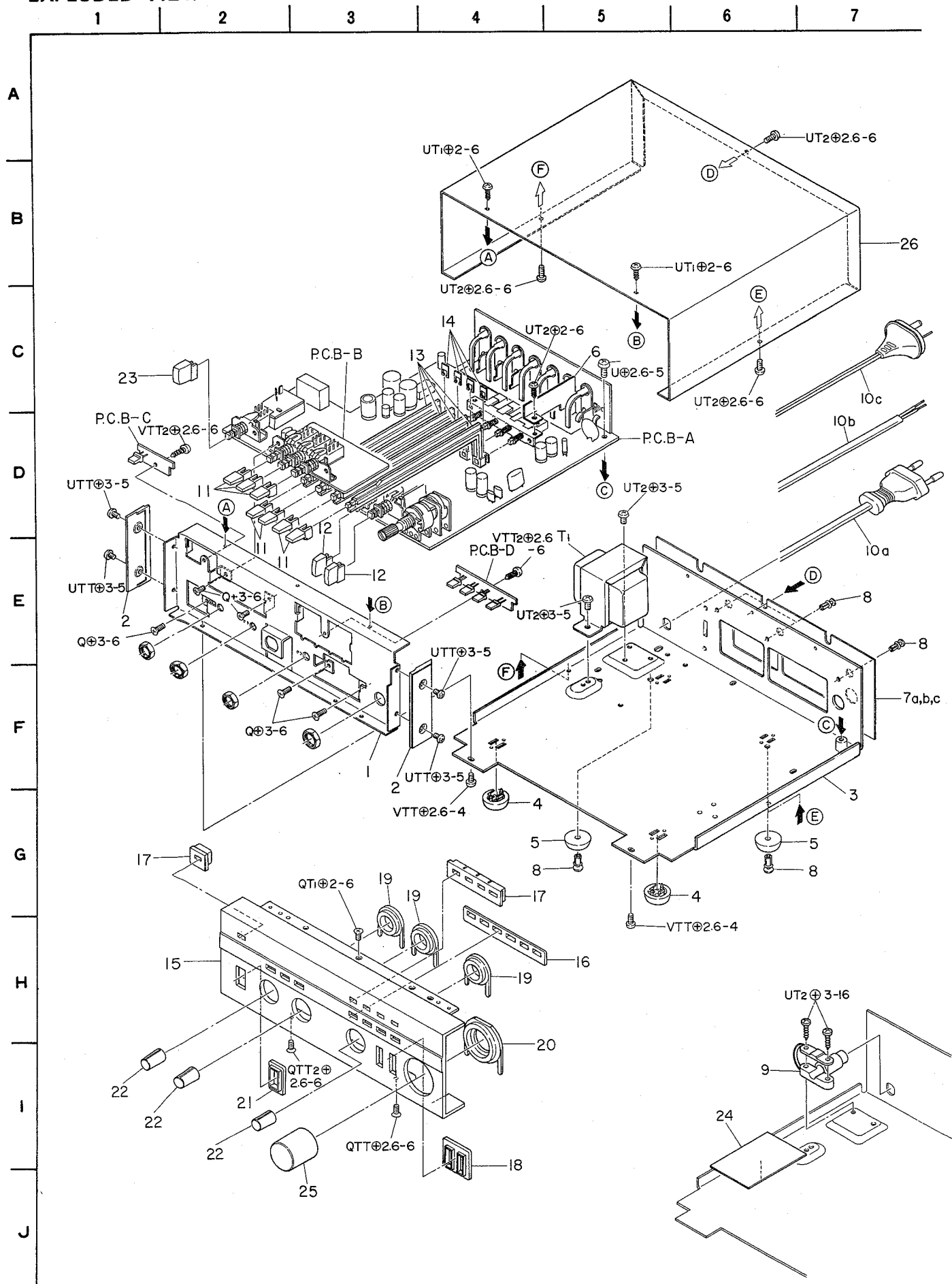
PARTS LIST
MECHANICAL PARTS

■ * mark in this part list shows exclusive part (which is used) for only Model No. ST-R30.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1a	82-750-025-01		Display (E,K model only)	*	1
1b	82-750-003-01		Display (G model only)	*	1
2	82-750-201-01		Chassis, Front	*	1
3	82-745-003-01		Panel L, Side	ST-R22	2
4	82-730-206-01		Shaft bearing	*	1
5	82-750-203-01		Shaft, Tuning	*	1
6	82-750-204-01		Flywheel, Tuning	*	1
7	82-750-214-01		Amp. chassis ass'y	*	1
8	82-745-019-01		Foot	*	4
9	82-750-205-01		Roller holder ass'y	*	1
10	82-473-220-01		Roller	AX-7500	1
11	87-071-013-01		Pulley A	*	1
12a	82-750-005-01		Jack plate (E model only)	*	1
12b	82-750-006-01		Jack plate (K model only)	*	1
12c	82-750-007-01		Jack plate (G model only)	*	1
13	82-750-001-01		Tuning knob	*	1
14	82-473-010-01		Antenna holder Ass'y	AX-7500	1
15	82-473-013-01		Holder C, Antenna (G model only)	AX-7500	1
16	87-085-166-01		Holder, AC power cord		1
17	87-085-101-01		Cord bushing		1
18	87-085-102-01		Nylon rivet, 3.5—5.5		2
19a	87-034-877-01		AC power cord (E model only)		1
19b	87-034-872-01		AC power cord (K model only)		1
19c	87-034-892-01		AC power cord (G model only)		1
20	82-304-656-01		Heat sink	AD-6900	1
21	85-740-004-01		Cabinet, Steel		1
22	82-461-378-01		Holder, IC	TPR-930	1
23	82-747-209-01		Spacer, Counter		1
24	82-470-240-31		Drum, Dial		1
25	82-750-212-01		Drum, Spring	*	1
26	82-745-009-01		Push-button B		E,K:5 G:3
27	82-945-010-01		Push-button C		1
28a	82-750-022-01		Panel, Front (E model only)		1
28b	82-750-038-01		Panel, Front (K model only)	*	1
28c	82-750-021-01		Panel, Front (G model only)	*	1
29	82-745-005-01		Window		1
30	82-745-011-01		Guide, Push-button B		E,K:2 G:1
31	82-745-012-01		Guide, Push-button C		1
32	82-750-020-01		Decorative plate, Tuning knob	*	1



EXPLODED VIEW

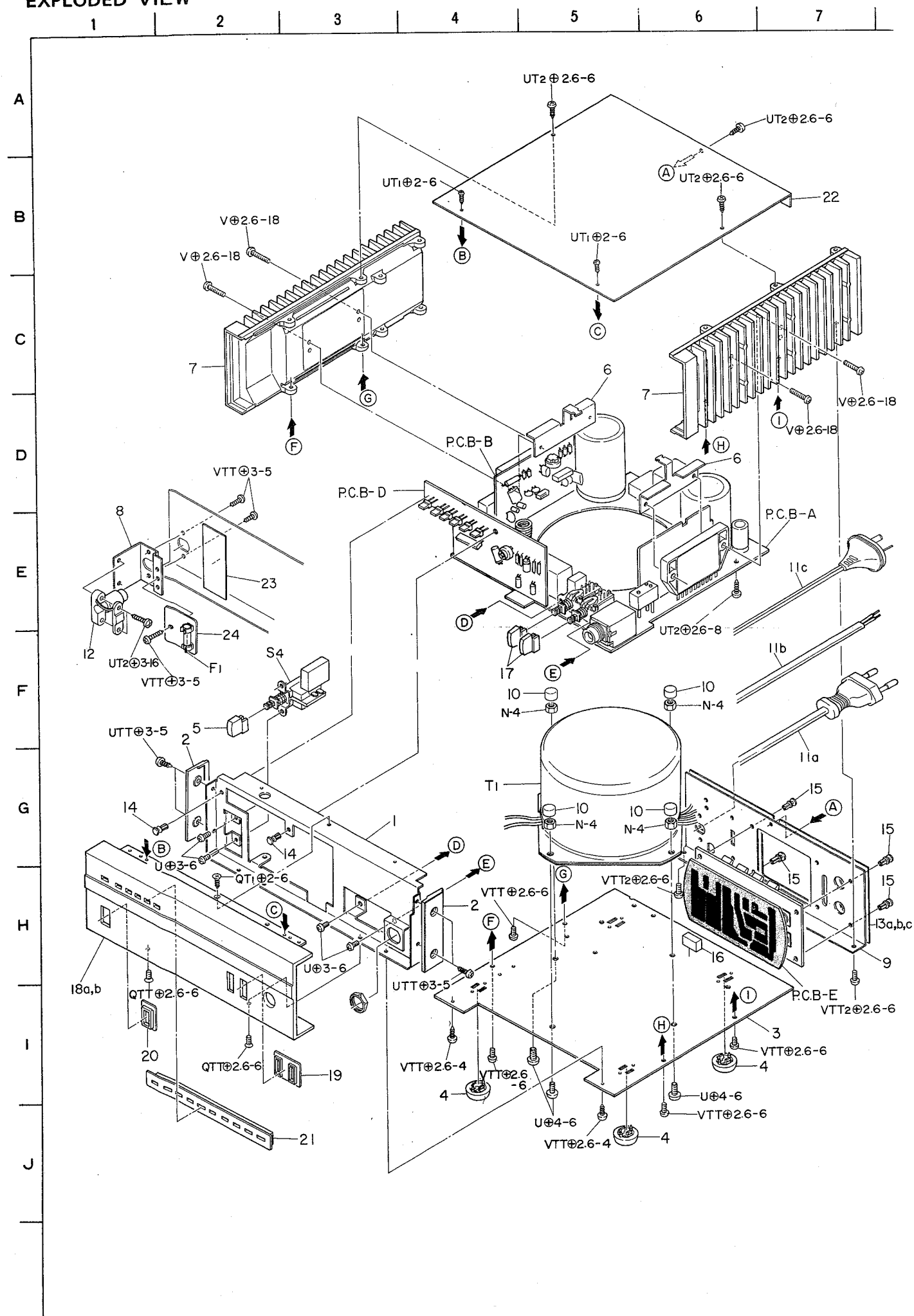


PARTS LIST
MECHANICAL PARTS

■ * mark in this part list shows exclusive part (which is used) for only Model No. SA-C30.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-751-206-01		Chassis, Front	*	1
2	82-745-003-01		Panel L, Side		2
3	82-751-207-01		Amp. chassis ass'y	*	1
4	82-745-019-01		Foot		2
5	87-085-176-01		Rubber foot A		2
6	82-751-641-01		Shield plate	*	1
7a	82-751-005-01		Jack plate (E model only)	*	1
7b	82-751-006-01		Jack plate (K model only)		1
7c	82-751-007-01		Jack plate (G model only)		1
8	87-085-102-01		Nylon rivet 3.5—5.5		5
9	87-085-166-01		Holder, AC power cord		1
10a	87-034-877-01		AC power cord (E model only)		1
10b	87-034-872-01		AC power cord (K model only)		1
10c	87-034-892-01		AC power cord (G model only)		1
11	82-745-008-01		Push-button A		7
12	82-745-009-01		Push-button B		2
13	82-751-203-01		Rod	*	4
14	82-751-205-01		Stopper rod	*	4
15	82-751-019-01		Panel, Front	*	1
16	82-745-011-01		Guide, Push-button B	*	1
17	82-748-204-01		Guide, LED		1
18	82-748-205-01		Guide, Switch		1
19	82-751-020-01		Decorative plate G, Knob	*	3
20	82-751-021-01		Decorative plate G, Volume Knob	*	1
21	82-745-012-01		Guide, Push-button C		1
22	82-745-013-01		Knob		3
23	82-745-010-01		Push-button C		1
24	82-748-214-01		Sheet, Insulation		1
25	82-748-002-01		Knob, Volume		1
26	85-740-004-01		Cabinet, Steel		1

EXPLODED VIEW



MECHANICAL PARTS
PARTS LIST

■ * mark in this part list shows exclusive part
(which is used) for only Model No. SA-P30.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-752-201-01		Chassis, Front	*	1
2	82-745-003-01		Panel, L, Side		2
3	82-752-203-01		Chassis, Amp.	*	1
4	82-745-019-01		Foot		4
5	82-745-010-01		Push-button C		1
6	82-752-205-01		Holder, IC	*	2
7	82-752-002-01		Heat sink	*	2
8	82-499-208-11		Fuse holder B		1
9	82-752-202-01		Chassis, Back	*	1
10	82-752-206-01		Cover, Nut	*	4
11a	87-034-941-01		AC power cord (E model only)		1
11b	87-034-942-01		AC power cord (K model only)		1
11c	87-034-892-01		AC power cord (G model only)		1
12	87-085-166-01		Holder, AC power cord		1
13a	82-752-005-01		Jack plate (E model only)	*	1
13b	82-752-006-01		Jack plate (K model only)	*	1
13c	82-752-007-01		Jack plate (G model only)	*	1
14	87-084-077-01		Nylon rivet, 3.5-4.5		2
15	87-085-102-01		Nylon rivet, 3.5-5.5		4
16	82-533-230-01		Cushion U15-10-10		1
17	82-745-009-01		Push-button B		2
18a	82-752-016-01		Panel, Front (E model only)	*	1
18b	82-752-012-01		Panel, Front (K,G model only)	*	1
19	82-745-011-01		Guide, Push-button B		1
20	82-745-012-01		Guide, Push-button C		1
21	82-749-206-01		Guide, LED		1
22	82-752-003-01		Cabinet, Steel	*	1
23	82-499-210-01		Sheet, Insulation		1
24	87-033-161-01		Fuse holder, 1P		1

ELECTRICAL MAIN PARTS LIST = ST-R30E,K

Symbol No.	Part No.	Description
«MAIN CIRCUIT BOARD SECTION»		
PCB-A	82-750-628-01	Main circuit board
IC1	82-494-791-01	IC, HA-11211
IC2	87-027-576-01	IC, HA-12016
Q1	87-026-100-01	FET, 2SK-49 (H2)
Q2,3	89-319-233-01	Transistor, 2SC1923(O)
Q4	89-307-104-01	Transistor, 2SC710(D)
Q5	87-026-165-01	FET, 3SK73(GR)
Q6	89-303-803-01	Transistor, 2SC380(O)
Q7,8,9,10, 11,12,13,14, 15,17,18, 22	89-318-154-01	Transistor, 2SC1815(Y)
Q16	89-110-154-01	Transistor, 2SA1015(Y)
Q19,20	89-402-275-01	Transistor, 2SD227(V)
Q21	89-408-804-51	Transistor, 2SD880(Y,GR)
Q23	89-318-464-01	Transistor, 2SC1846(R)
D1	87-027-326-01	Diode, 1S2236
D2,3,8,9,11, 12,13,14,15, 16,17,18	87-027-097-01	Diode, 1S1555
D4,5,6,7	88-052-188-11	Diode, 1S188(FM)
D19,20,21,22	87-027-365-01	Diode, S5277B
D23	87-027-552-01	Zener diode, HZ6B3L
L1	82-750-609-01	FM antenna coil
L2	82-750-610-01	FM RF coil
L3,4,10,17, 18,19	87-005-121-01	Choke coil, 2.2μH
L5	82-750-611-01	FM OSC coil
L8	82-750-605-01	AM OSC coil
L9	82-750-606-01	LW OSC coil
L11	82-742-641-01	Coil, Quad
LPF1,2	82-497-635-01	Low-pass filter
CF1	87-008-193-01	FM ceramic filter, MS2GKK (E model only)
CF2,3	87-008-192-01	Ceramic filter MA8KY-A (E model only)
CF1,2,3	87-008-192-01	Ceramic filter MA8KY-A (K model only)
VC1~5	82-750-613-01	Variable condenser
TC1,2	87-011-110-01	Trimmer, 5P
TC3	87-011-108-01	Trimmer, 8P
TC4,6	87-011-109-01	Trimmer, 15P
TC5,7	82-494-674-01	FM IFT
IFT1	87-008-160-01	AM IFT (DET)
IFT2	87-030-064-01	Ceramic filter transformer, 016 (E model)
CFT1	87-030-071-01	Ceramic filter transformer, 025 (K model)
J1,2,3	82-730-633-11	Antenna terminal plate, w/2p pin jack (E model)
J1,2,3	82-730-634-11	Antenna terminal plate w/2p pin jack (K model)
S1~5	82-750-615-01	Push-switch (FM, MW, LW, AFC/MUTE, HI-BLEND)
SFR1	87-021-612-01	Semi-fixed resistor, 4.7kΩ-B
SFR2	87-021-617-01	Semi-fixed resistor, 220kΩ-B
PIN-1	87-032-897-01	Pin, 3P
PIN-2	87-032-926-01	Pin, 6P
< Resistor >		
 R121	87-029-010-01	10Ω ¼w Fuse resistor

Symbol No.	Part No.	Description
< Capacitors >		
C22	88-254-060-01	6pF Ceramic NPO
C19	88-254-150-01	15pF Ceramic NPO
C21	88-251-210-01	22pF Ceramic NPO
C17	88-254-270-01	39pF Ceramic NPO
C20	88-285-080-01	8pF Ceramic N150
C49	87-014-039-01	180pF PP
C42	87-014-046-01	360pF PP
C90	87-014-057-01	1000pF PP
C31	87-014-067-01	2700pF PP

«DISPLAY CIRCUIT BOARD SECTION»

PCB-B	82-750-629-01	Display circuit board
IC3	82-730-607-01	IC, T-1400J (E model)
IC3	82-730-644-01	IC, T-1400E (K model)
IC4	87-027-261-01	IC, LB-1405
Q24~28	89-110-154-01	Transistor, 2SA1015(Y)
Q29,30	89-318-154-01	Transistor, 2SC1815(Y)
D24~28	87-027-544-01	Light-emitting diode, LN05202P
D29	87-027-218-01	Light-emitting diode, SR-105D
D30	87-027-695-01	Light-emitting diode, LN5431GA-3A
L12~16	87-005-121-01	Choke coil, 2.2μH
X1	82-747-619-01	Crystal, 6.4MHz

«RELAY CIRCUIT BOARD SECTION»

 PCB-C	82-750-623-01	Relay circuit board
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«MISCELLANEOUS»

 T1	82-750-626-01	Power transformer (E model)
 T1	82-750-627-01	Power transformer (K model)
 S6	87-031-574-01	Push-switch (POWER)
 L6,7	87-034-877-01	AC power cord (E model)
	87-034-872-01	AC power cord (K model)
	82-750-625-01	MW, LW bar antenna

 This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

ELECTRICAL MAIN PARTS LIST = ST-R30G

Symbol No.	Part No.	Description
« MAIN CIRCUIT BOARD SECTION »		
PCB-A	82-750-621-11	Main circuit board
IC1	82-494-791-01	IC, HA11211
IC2	87-027-576-01	IC, HA12016
Q1	87-026-100-01	FET, 2SK-49(H ₂)
Q2,3	89-319-233-01	Transistor, 2SC1923(O)
Q4	89-307-104-01	Transistor, 2SC710(D)
Q5	87-026-165-01	FET, 3SK73(GR)
Q6	89-303-803-01	Transistor, 2SC380(O)
Q7~13,15,20	89-318-154-01	Transistor, 2SC1815(Y)
Q14	89-110-154-01	Transistor, 2SA1015(Y)
Q16,17	89-402-275-01	Transistor, 2SD227(V)
Q18	89-318-464-01	Transistor, 2SC1846(R)
Q19	89-408-804-51	Transistor, 2SD880Y(GR)
D1	87-027-326-01	Diode, 1S2236
D3~11,16,17	87-027-097-01	Diode, 1S1555
D12~15	88-052-188-11	Diode, 1S188(FM)
D18~21	87-027-365-01	Diode, S5277B
D22	87-027-552-01	Zener diode, HZ6B3L
L1	82-705-609-01	FM antenna coil
L2	82-750-610-01	FM RF coil
L3,5,7,10	87-005-121-01	Choke coil, 2.2μH
L4	82-750-611-01	FM OSC coil
L8	82-750-605-01	AM OSC coil
L9	82-742-641-01	Quad coil
VC1~5,TC1,2	82-750-613-01	V.C
TC3	87-011-110-01	Trimmer, 5pF
TC4,5	87-011-108-01	Trimmer, 8pF
CF1~3	87-008-192-01	FM ceramic filter
CFT1	87-030-064-01	AM ceramic filter transformer
IFT1	82-494-674-01	FM IFT
IFT2	87-008-160-01	AM IFT (DET)
LPF1,2	82-497-635-01	Low-pass filter
SFR1	87-021-612-01	Semi-fixed resistor, 4.7kΩ-B
SFR2	87-021-617-01	Semi-fixed resistor, 220kΩ-B
J1,2	82-747-618-01	Antenna terminal plate, with/2P pin jack
S1~3	82-750-607-01	Push-switch (BAND, MUTING, HI-BLEND)
 S4	87-031-574-01	Push-switch (POWER)
PIN-1	87-032-897-01	Pin, 3P
PIN-2	82-481-647-01	Pin, 4P
 R130	87-029-010-01	< Resistor > 10Ω ¼w Fuse resistor
C39	87-014-046-01	360pF PP
C72	87-014-057-01	1000pF PP
C12	88-254-060-01	6pF Ceramic
C8	88-285-080-01	8pF Ceramic
C6,7	88-254-150-01	15pF Ceramic
C10	88-282-182-01	18pF Ceramic
C38	88-287-200-01	20pF Ceramic
« DISPLAY CIRCUIT BOARD SECTION »		
PCB-B	82-750-622-11	Display circuit board
IC3	82-730-607-01	IC, T-1400J
IC4	87-027-261-01	IC, LB-1405
Q21~24	89-110-154-01	Transistor, 2SA1015(Y)
Q25,26	89-318-154-01	Transistor, 2SC1815(Y)
D23	88-052-188-11	Diode, 1S188(FM)
D24	87-027-218-01	Light emitting diode, SR-105D
D25~29	87-027-544-01	Light emitting diode, LN05202(P)
D30	87-027-641-01	Light emitting diode, LN543GA (Frequency Indicator)

Symbol No.	Part No.	Description
L11,12,13,14 15,16	87-005-121-01	Choke coil, 2.2μH
X1	82-747-619-01	Crystal, 6.4 MHz
« RELAY CIRCUIT BOARD SECTION »		
PCB-C	82-750-623-01	Relay circuit board
« MISCELLANEOUS »		
 T1	82-750-619-01	Power transformer
 L6	87-034-892-01	AC power cord
	87-085-101-01	Cord bushing (for bar antenna)
	87-085-165-01	Cord bushing (for AC power cord)
	82-750-608-01	AM bar antenna coil

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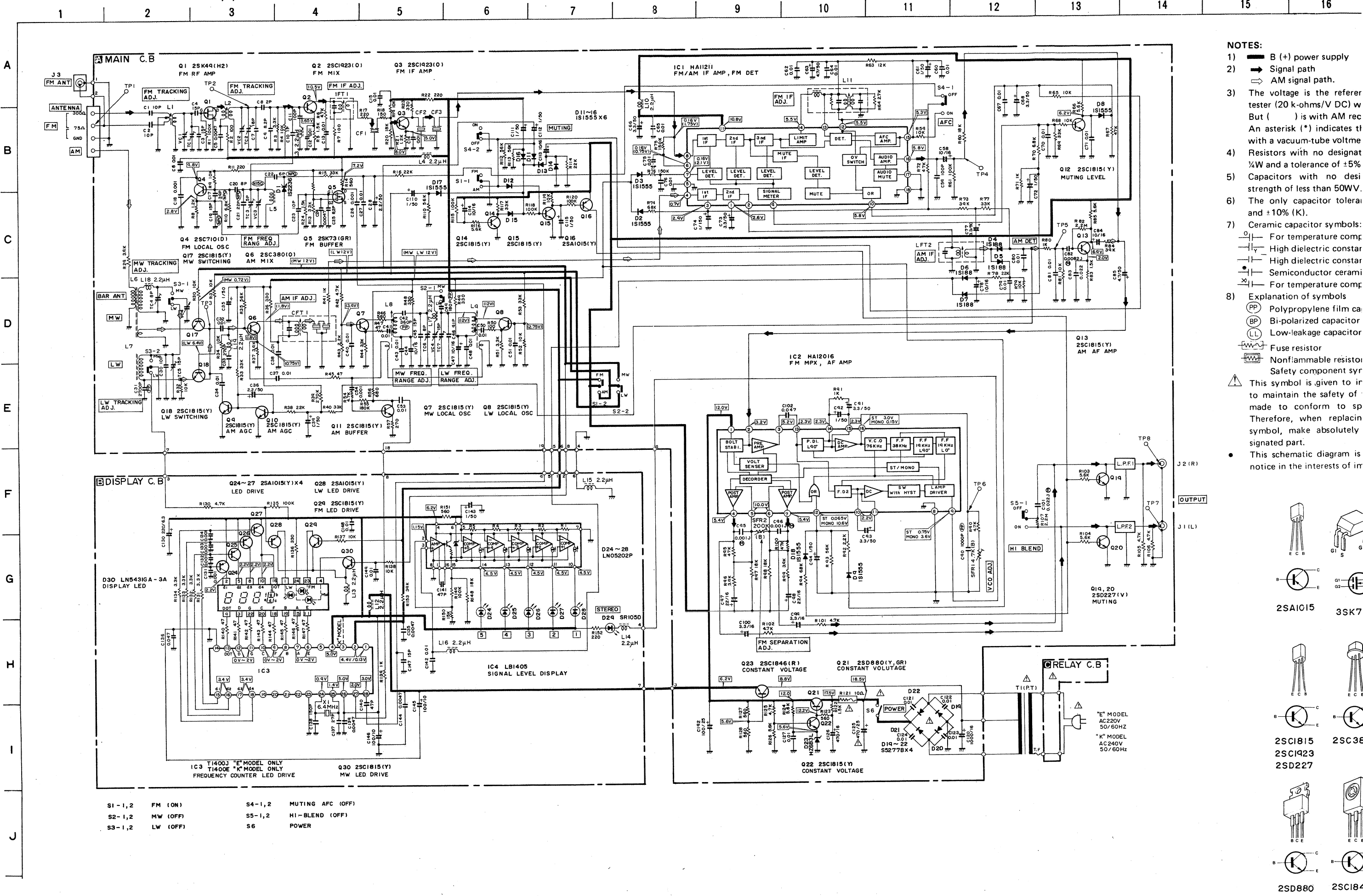
ELECTRICAL MAIN PARTS LIST = SA-C30E,K,G

Symbol No.	Part No.	Description
« MAIN CIRCUIT BOARD SECTION »		
PCB-A	82-751-626-11	Main circuit board
IC1,2	87-027-629-01	IC, 4558DX
Q1~4	89-109-916-01	Transistor, 2SA991(F)
Q9	89-304-953-41	Transistor, 2SC495(O,Y)
Q10	89-105-053-41	Transistor, 2SA505(O,Y)
Q11,13,14	89-309-456-01	Transistor, 2SC945L(P)
Q12	89-107-336-01	Transistor, 2SA733(P)
D1	87-027-376-01	Diode, 1B4B41
D3,4	87-027-329-01	Zener diode, HZ22-3L
D5~9	87-027-219-01	Diode, MA150
D11,12	87-027-365-01	Diode, S5277B
CP1	87-019-104-01	Compound capacitor, 0.01μF
J1~14	82-498-608-11	Jack plate ass'y
VR1	82-751-636-01	Volume, 100kΩ-B (VOLUME)
VR2	82-751-637-01	Volume, 50kΩ-W (BALANCE)
VR3	87-021-632-01	Volume, 50kΩ-O (TREBLE)
VR4	87-021-631-01	Volume, 50kΩ-S (BASS)
S1~4	82-751-606-01	Push-switch (FUNCTION)
S8,9	82-748-617-01	Push-switch (LOUDNESS, TAPE MONITOR)
S10	87-031-581-01	Push-switch (POWER)
RY1,S11	87-045-134-01	Relay, 224S
PIN-1	87-032-897-01	Pin, 3P
< Resistors >		
R13,14	87-025-234-01	82Ω ±1% Metal film resistor
R95	87-025-055-01	270Ω 2W Metal film resistor
R17,18	87-025-235-01	3.9kΩ ±1% Metal film resistor
R15,16	87-025-236-01	47kΩ Metal film resistor
R47,48,49,50	87-025-241-01	150kΩ Metal film resistor
R45,46	87-025-242-01	300kΩ Metal film resistor
< Capacitors >		
C3,4,77,78	87-015-246-01	4.7μF 25V Electrolytic LL
C17,18	87-014-121-01	0.0012μF PP
C15,16	87-014-122-01	0.018μF PP
C13,14	87-014-123-01	0.068μF PP
« SWITCH CIRCUIT BOARD SECTION »		
PCB-B	82-751-627-11	Switch circuit board
S5,6,7	82-751-609-01	Push-switch (MODE, MUTING, LOW FILTER)
« LED CIRCUIT BOARD-1 SECTION »		
PCB-C	82-751-628-01	LED circuit board-1
D25	87-027-543-01	Light emitting diode, LN317GP (POWER INDICATOR)

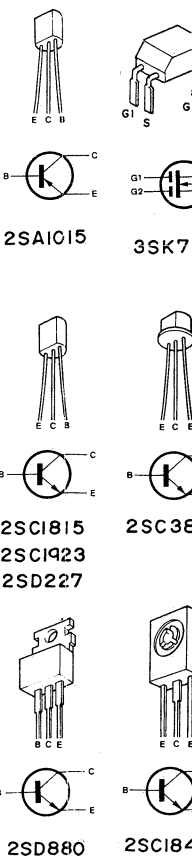
Symbol No.	Part No.	Description
« LED CIRCUIT BOARD-2 SECTION »		
PCB-D	82-751-629-01	LED circuit board-2
D21~24	87-027-542-01	Light emitting diode, LN217RP (PHONO, AUX 1, AUX 2, TUNER INDICATOR)
« MISCELLANEOUS »		
T1	82-751-633-01	Power transformer (E model)
T1	82-751-635-01	Power transformer (K model)
T1	82-751-634-01	Power transformer (G model)
	87-034-877-01	AC power cord (E model)
	87-034-872-01	AC power cord (K model)
	87-034-892-01	AC power cord (G model)
	87-085-165-01	Cord bushing (G model)

⚠ This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

SCHEMATIC DIAGRAM = ST-R30E,K,

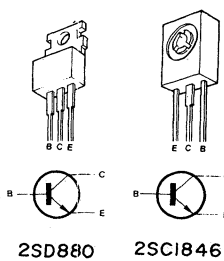
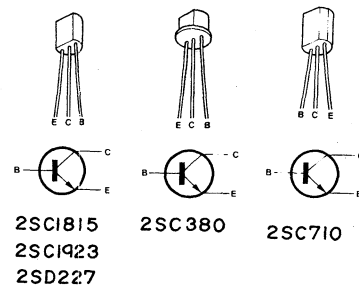
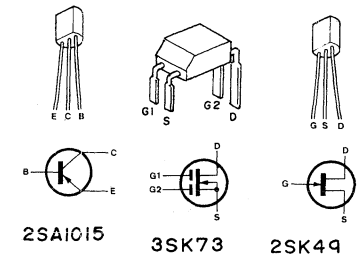
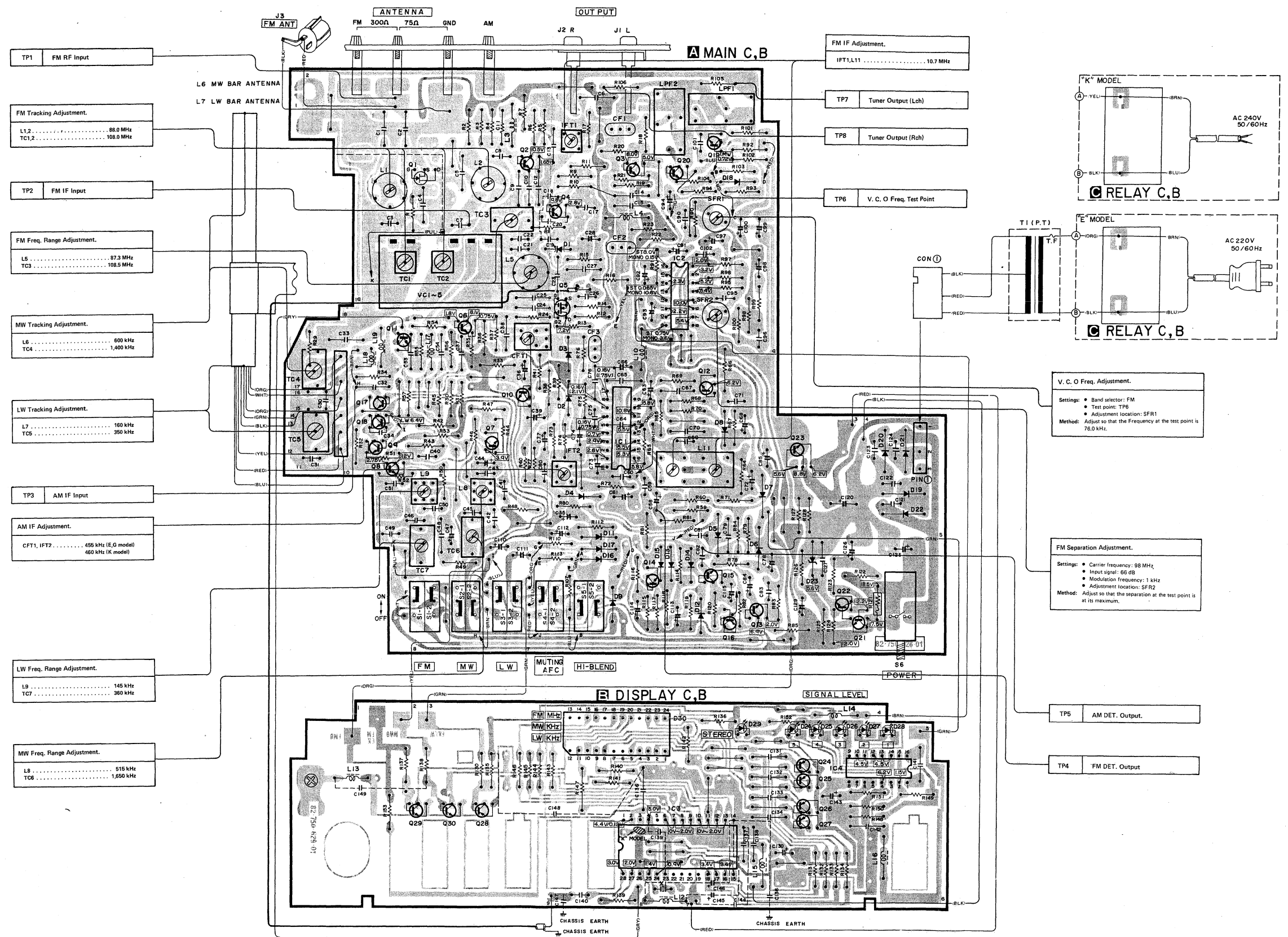


- NOTES:
- 1) B (+) power supply
 - 2) Signal path
 - 3) The voltage is the referer tester (20 k-ohms/V DC) w But () is with AM rec An asterisk (*) indicates tl with a vacuum-tube voltm
 - 4) Resistors with no designat 1/4W and a tolerance of ±5%
 - 5) Capacitors with no desi strength of less than 50WV.
 - 6) The only capacitor tolera and ±10% (K).
 - 7) Ceramic capacitor symbols:
 - For temperature comp
 - High dielectric constar
 - High dielectric constar
 - Semiconductor cerami
 - For temperature comp
 - 8) Explanation of symbols
 - Polypropylene film ca
 - Bi-polarized capacitor
 - Low-leakage capacitor
 - Fuse resistor
 - Nonflammable resistor
 - Safety component syr
- This symbol is given to maintain the safety of made to conform to sp Therefore, when replacin symbol, make absolutely signed part.
- This schematic diagram is notice in the interests of ir



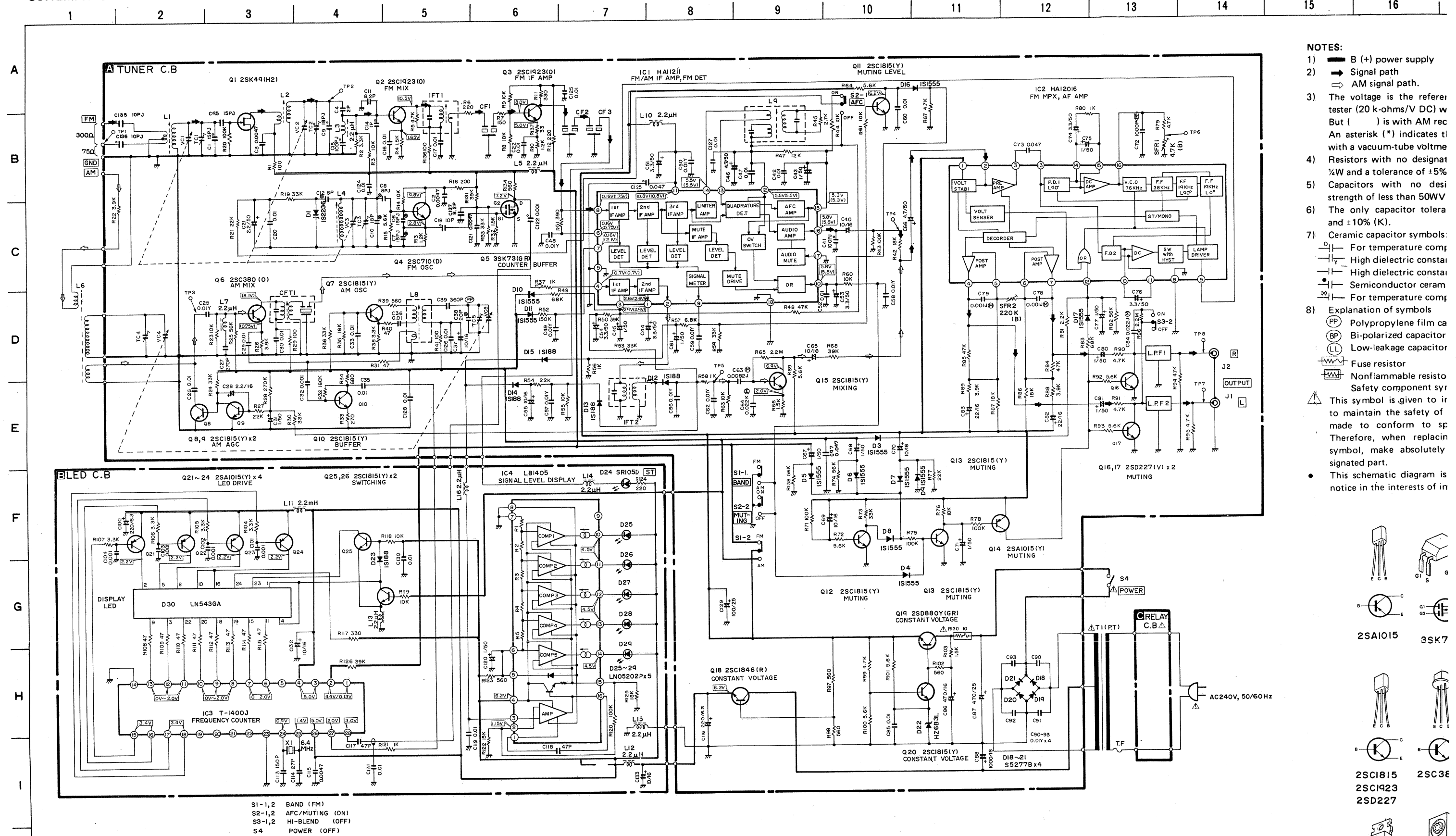
NOTES:

- 1)  B (+) power supply
- 2)  Signal path
 AM signal path.
- 3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. But () is with AM reception
 An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
- 4) Resistors with no designation have a rated power of 1/4W and a tolerance of $\pm 5\%$.
- 5) Capacitors with no designation have a dielectric strength of less than 50WV.
- 6) The only capacitor tolerances indicated are $\pm 5\%$ (J) and $\pm 10\%$ (K).
- 7) Ceramic capacitor symbols:
 For temperature compensation (SL)
 High dielectric constant system (YY)
 High dielectric constant system (YW, YP, YZ)
 Semiconductor ceramic
 For temperature compensation (SH)
- 8) Explanation of symbols
 Polypropylene film capacitor
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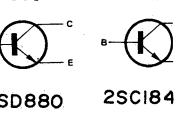
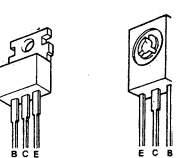
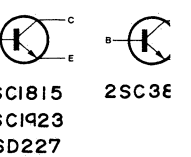
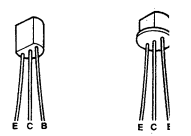
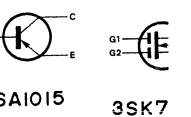
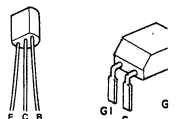
- NOTES** (1)  B(+) Pattern  Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
But () is with AM reception.

SCHEMATIC DIAGRAM



NOTES:

- 1) B (+) power supply
 - 2) → Signal path
⇨ AM signal path.
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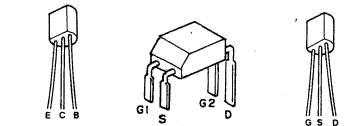


WIRING

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

NOTES:

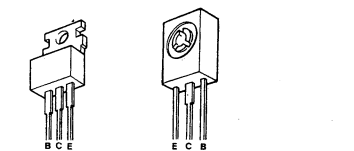
- 1) B (+) power supply
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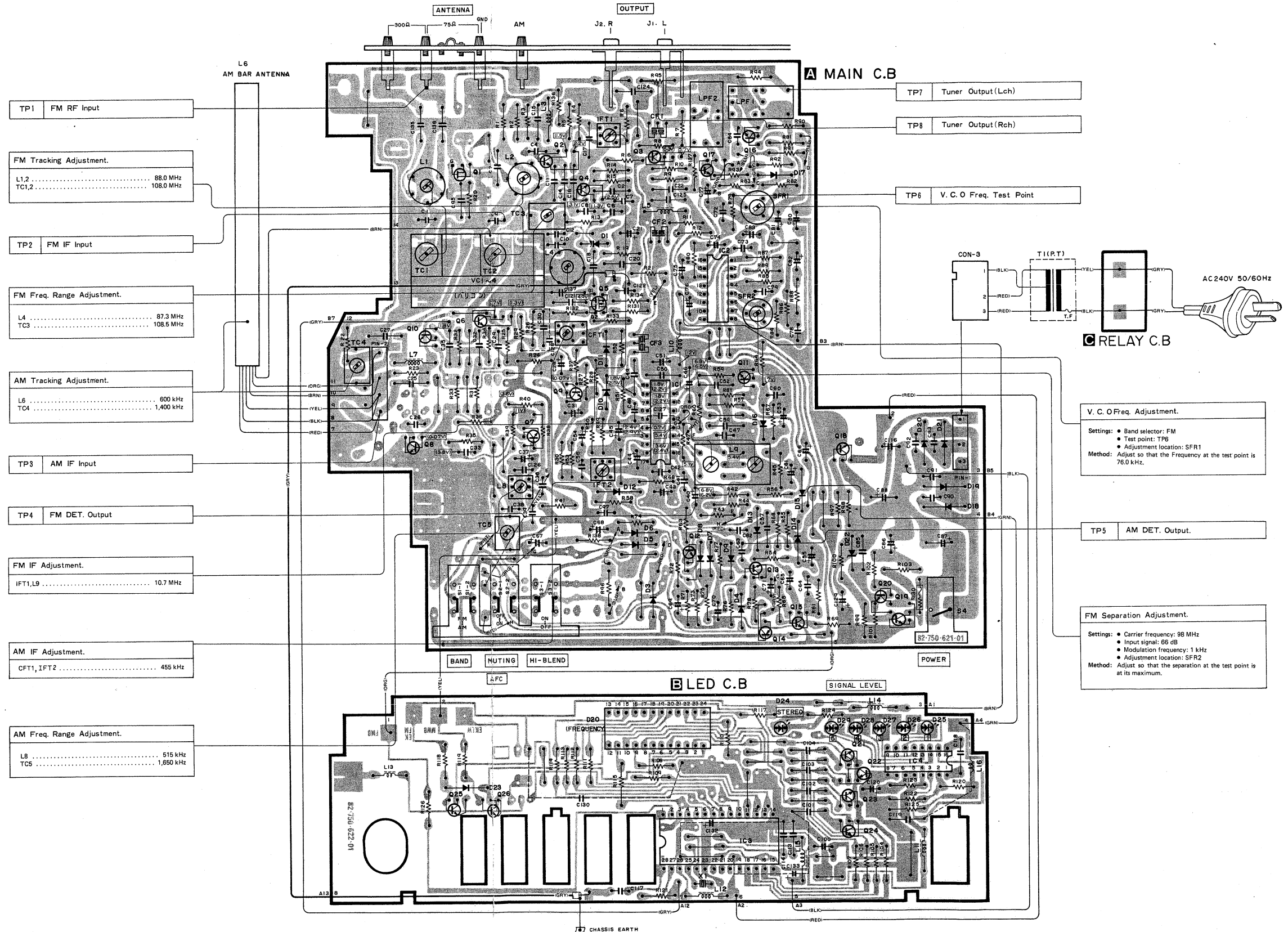
25A1015 3SK73 2SK49



2SC1815 2SC380 2SC710
2SC1923 2SD227

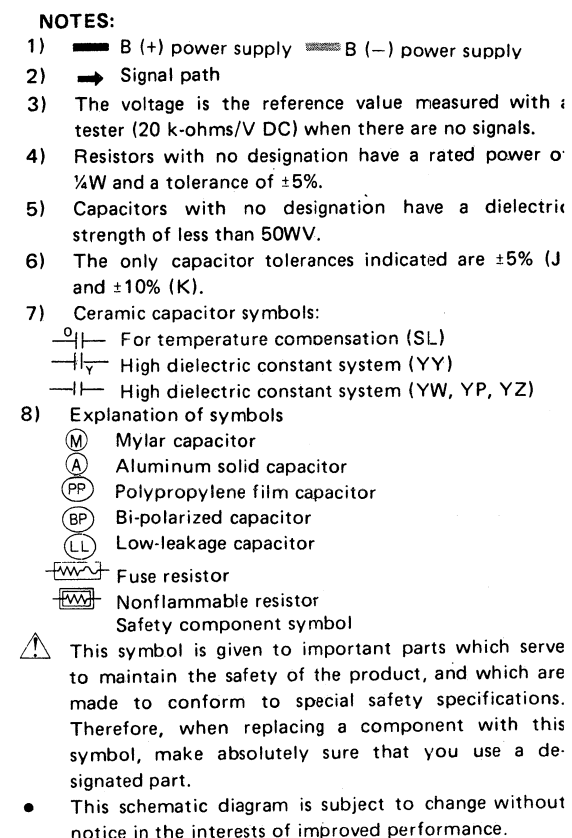


2SD880 2SC1846



NOTES (1) B(+) Pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. But () is with AM reception.



WIRING

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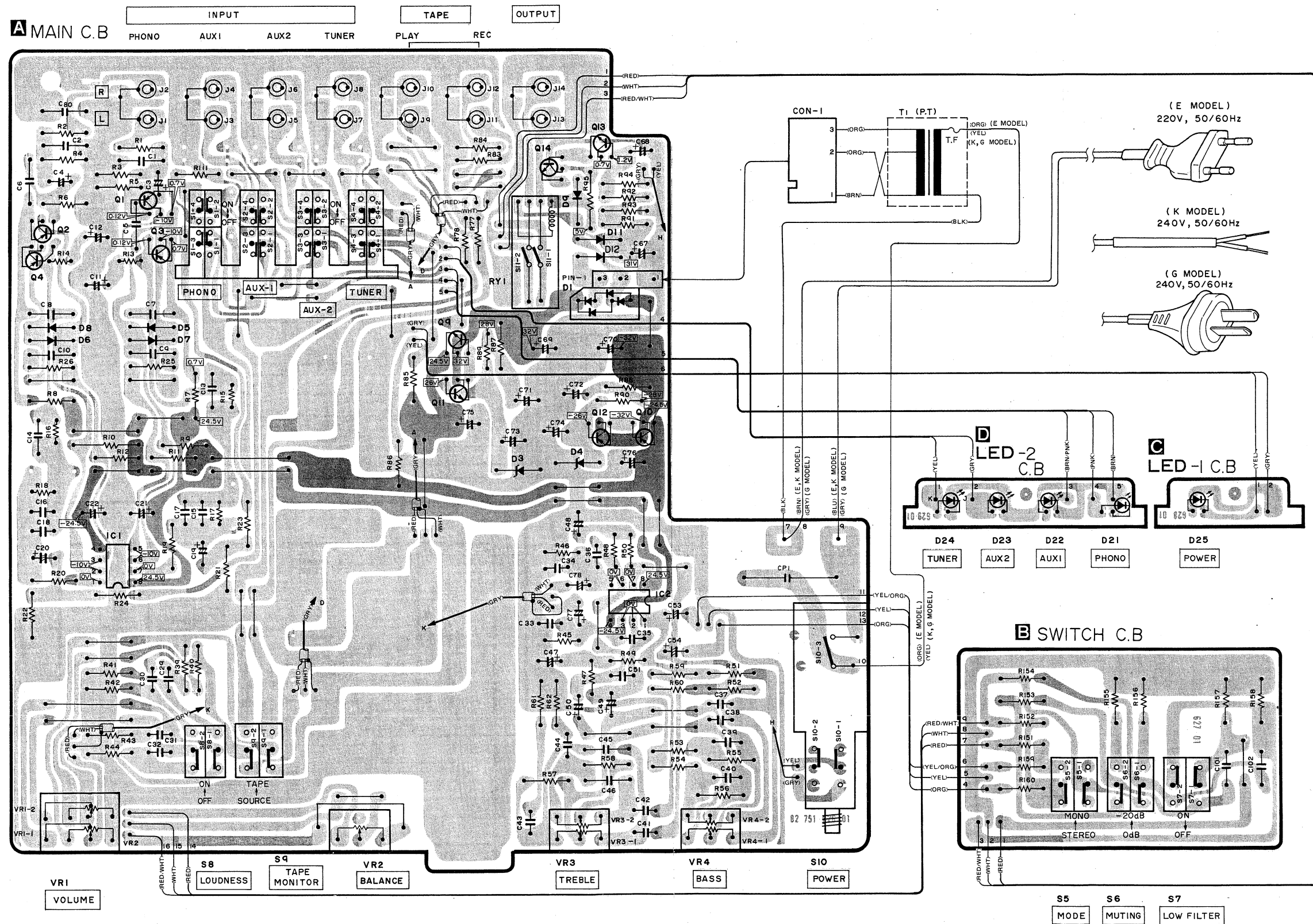
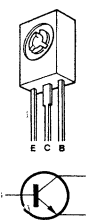
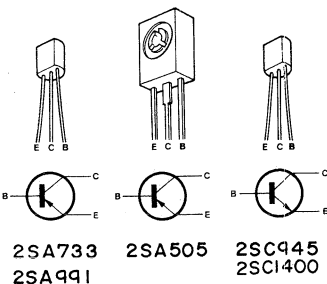
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+) power supply B (-) power supply
 al path
 tage is the reference value measured with a
 20 k-ohms/V DC) when there are no signals.
 s with no designation have a rated power of
 a tolerance of $\pm 5\%$.
 rs with no designation have a dielectric
 of less than 50WV.
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 % (K).
 capacitor symbols:
 r temperature compensation (SL)
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 gh dielectric constant system (YW, YP, YZ)
 ion of symbols
 ar capacitor
 minium solid capacitor
 ypropylene film capacitor
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 v-leakage capacitor
 e resistor
 nflammable resistor
 ety component symbol
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 e, when replacing a component with this
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 ematic diagram is subject to change without
 the interests of improved performance.



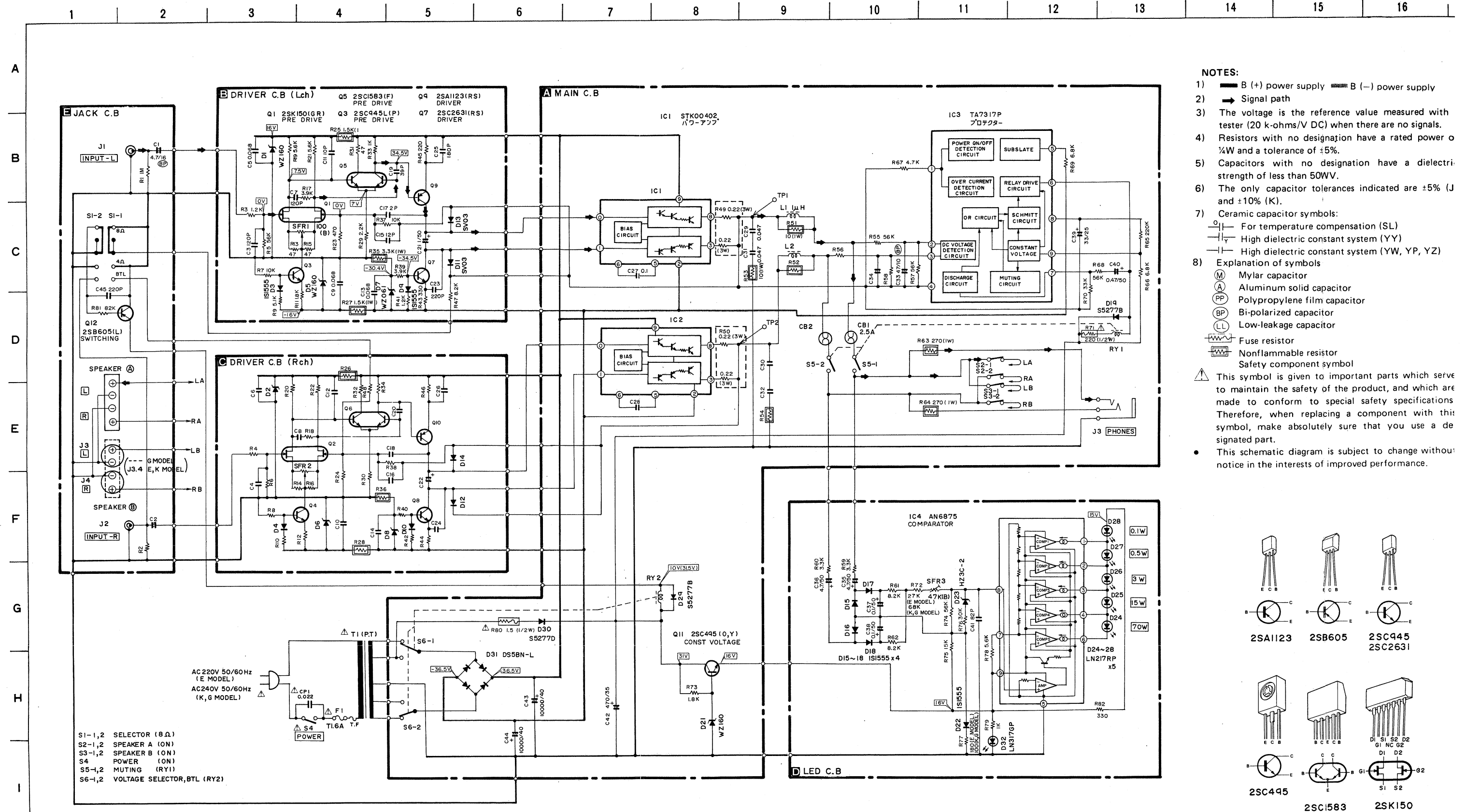
NOTES (1) B(+) Pattern B(-) Pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.

An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

* mark in this part list shows exclusive part
 (which is used) for only Model.

SCHEMATIC DIAGRAM



WIRING

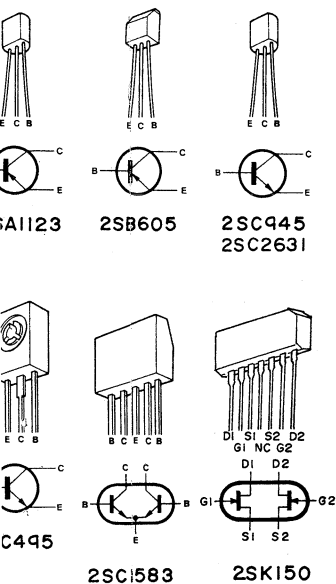
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

power supply B (–) power supply
al path
age is the reference value measured with a
k-ohms/V DC) when there are no signals.
with no designation have a rated power of
tolerance of $\pm 5\%$.
s with no designation have a dielectric
of less than 50WV.
capacitor tolerances indicated are $\pm 5\%$ (J)
(K).

capacitor symbols:
temperature compensation (SL)
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dielectric constant system (YW, YP, YZ)
on of symbols
r capacitor
minum solid capacitor
propylene film capacitor
larized capacitor
leakage capacitor

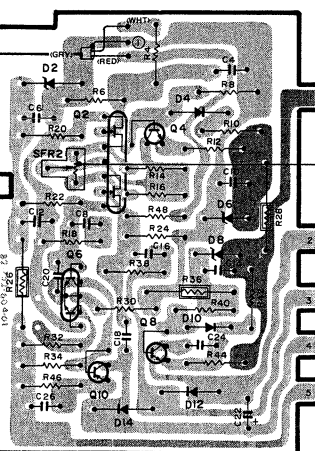
resistor
flammable resistor
y component symbol
ool is given to important parts which serve
in the safety of the product, and which are
conform to special safety specifications.
when replacing a component with this
make absolutely sure that you use a de-
art.

matic diagram is subject to change without
the interests of improved performance.



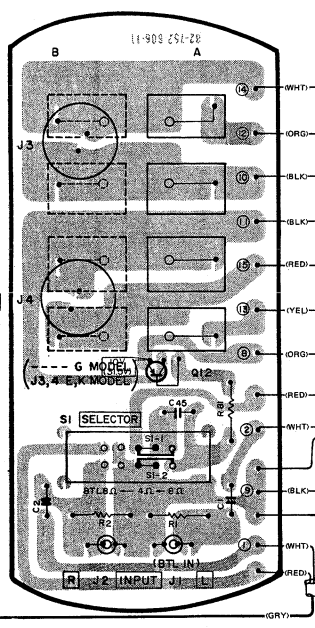
Zero Potential (DC Balance) Adjustment.

Settings: • Test point: TP1 (Lch), TP2 (Rch)
• Adjustment location: SFR1 (Lch), SFR2 (Rch)
Method: Connect a DC voltmeter across test point and ground. Adjust so that the value detected by the DC voltmeter is 0V.

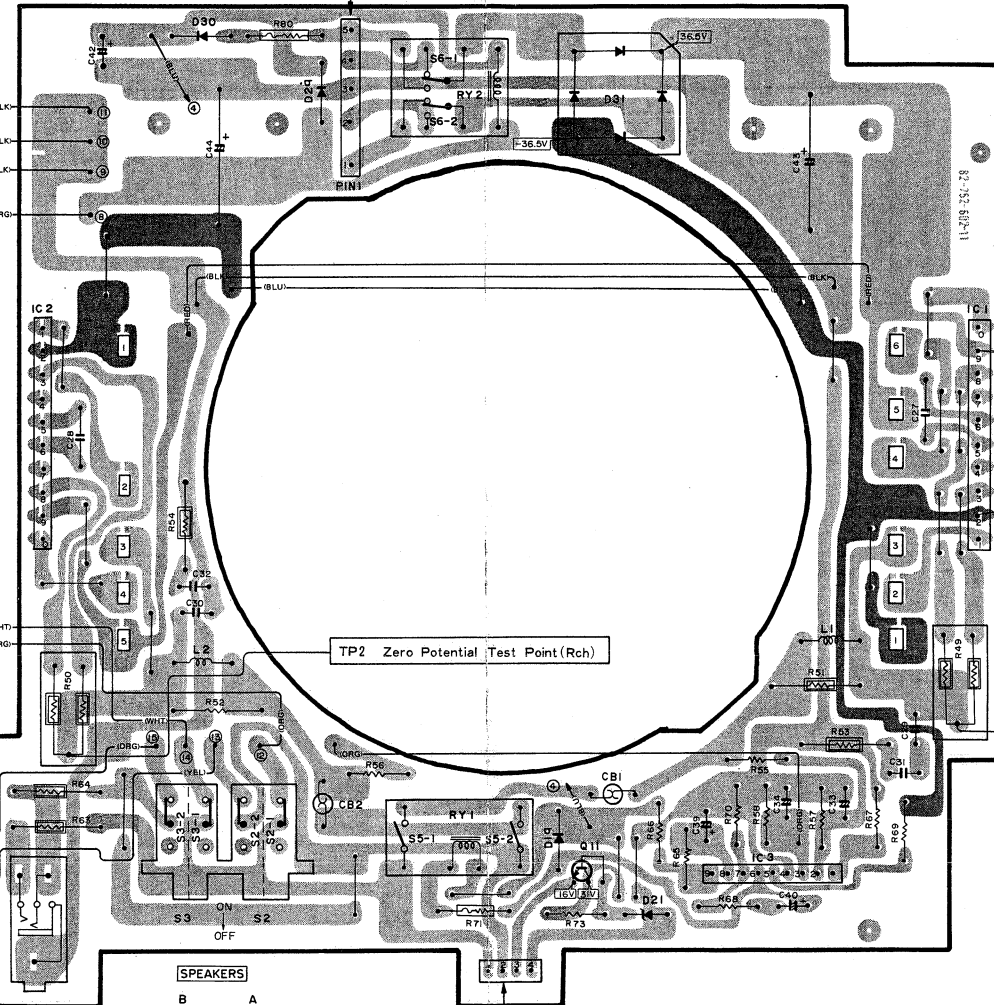
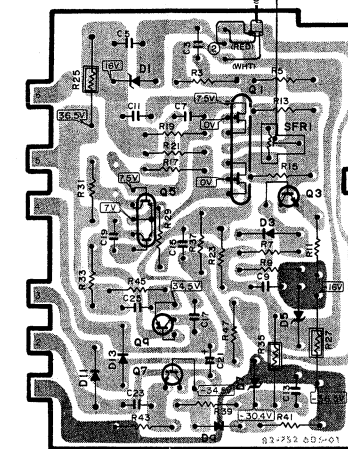
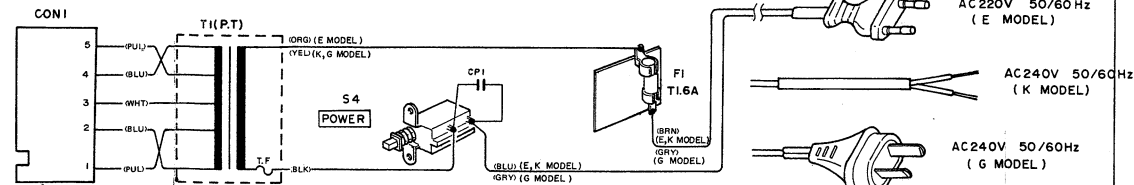


C DRIVER C.B (Rch)

JACK C.B



A MAIN C.B

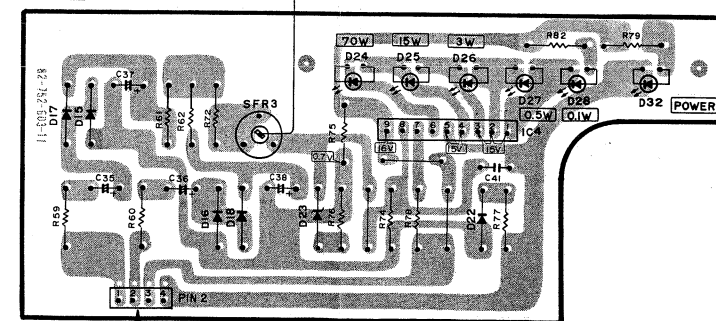
J3 PHONES
SPEAKERS
B A

B DRIVER C.B (Lch)

TP1 Zero Potential Test Point (Lch)

Power Indicator Adjustment.
Settings: Input signal: 1 kHz, 35W
40... E model, 80... K, G model
Adjustment location: SFR3
Method: Adjust so that the power indicator at 70W light
up when the output level is
16.7V (K, G model) or 11.8V (E model).

D LED C.B



NOTES (1) B(+) Pattern B(–) Pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

* mark in this part list shows exclusive part
(which is used) for only Model.

ACCESSORIES/PACKAGE ST-R30E,K,G

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
1a	82-750-858-01		Printed indiv., Packing (E,K model only)	*	1	
1b	82-750-855-01		Printed indiv., Packing (G model only)	*	1	
2	82-750-852-01		Cushion L, Printed indiv.	*	1	
3	82-750-853-01		Cushion R, Printed indiv.	*	1	
4	87-051-130-11		Poly-vinyl sack		1	
5a	87-051-135-11		Poly-vinyl sack (E,K model only)		1	
5b	87-051-137-11		Poly-vinyl sack (G model only)		1	
6	87-056-604-01		Poly-vinyl sack		1	
7a	82-750-906-01		Instructions booklet (E model only)	*	1	
7b	82-750-907-01		Instructions booklet (K model only)	*	1	
7c	82-750-908-01		Instructions booklet (G model only)	*	1	
8	87-051-171-11		Poly-vinyl sack (for instruction)		1	
9	87-056-009-41		Distributors list		1	
10	87-156-001-01		Handle		2	
11	86-944-015-01		Connection cord CW-129CSK		1	
12	87-043-051-01		FM feeder antenna		1	
13	87-056-008-11		Label, AC power cord (K model only)		1	
14	87-056-032-01		Guarantee card (G model only)		1	

ACCESSORIES/PACKAGE SA-C30E,K,G

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
1	82-751-853-01		Printed indiv., Packing	*	1	
2	82-750-852-01		Cushion L, Printed indiv.	ST-R30	1	
3	82-750-853-01		Cushion R, Printed indiv.	ST-R30	1	
4a	87-051-135-11		Poly-vinyl sack (E,K model only)		1	
4b	87-051-137-11		Poly-vinyl sack (G model only)		1	
5	87-056-603-01		Poly-vinyl sack		1	
6a	82-751-906-11		Instructions booklet (E model only)	*	1	
6b	82-751-907-11		Instructions booklet (K model only)	*	1	
6c	82-751-908-11		Instructions booklet (G model only)	*	1	
7	87-051-171-11		Poly-vinyl sack (for instruction)		1	
8	87-056-009-41		Distributors list		1	
9	86-156-001-01		Handle		2	
10	87-056-008-11		Label, AC power cord (K model only)		1	
11	87-056-032-01		Guarantee card (G model only)		1	

ACCESSORIES/PACKAGE SA-P30E,K,G

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
1	82-752-853-01		Printed indiv. Packing	*	1	
2	82-750-852-01		Cushion L, Printed indiv.	ST-R30	1	
3	82-750-853-01		Cushion R, Printed indiv.	ST-R30	1	
4	87-051-130-11		Poly-vinyl sack		1	
5a	87-051-135-11		Poly-vinyl sack (E,K model only)		1	
5b	87-051-137-11		Poly-vinyl sack (G model only)		1	
6	87-056-603-01		Poly-vinyl sack		1	
7a	82-752-906-11		Instructions booklet (E model only)	*	1	
7b	82-752-907-11		Instructions booklet (K model only)	*	1	
7c	82-752-908-11		Instructions booklet (G model only)	*	1	
8	87-051-171-11		Poly-vinyl sack (for instruction)		1	
9	87-056-009-41		Distributors list		1	
10	86-156-001-01		Handle		2	
11	86-944-015-01		Connection cord CW-129CSK		1	
12	87-056-008-11		Label, AC power cord (K model only)		1	
13	87-056-032-01		Guarantee card		1	

AIWACO., LTD.

800725(1)-Z

Printed in Japan

ELECTRICAL MAIN PARTS LIST = SA-P30E,K,G

Symbol No.	Part No.	Description
« MAIN CIRCUIT BOARD SECTION »		
PCB-A	82-752-602-21	Main circuit board
IC1,2	87-027-627-01	IC, STK00402
IC3	87-027-379-01	IC, TA7317P
Q11	89-304-953-41	Transistor, 2SC495(O,Y)
D19,29	87-027-365-01	Diode, S5277B
D21	87-027-287-01	Zener diode, WZ-160
D30	87-027-626-01	Diode, S5277D
D31	87-027-386-01	Encapsulated diode, DS-5BN-L
L1,2	82-499-639-01	Coil, 1 μ H
⚠ CB1,2	87-030-074-01	Circuit breaker, 2.7A
S2,3	87-031-545-01	Push-switch (SPEAKERS A,B)
RY1,S5	87-045-140-01	Relay, 24V G2Z
RY2,S6	82-499-631-01	Relay, 24V MY-2
J3	82-499-623-01	Jack, 6.3 ϕ (PHONES)
PIN-1	82-481-697-01	Pin, 5P
< Resistors >		
R51~54	87-025-120-01	10 Ω 1W Metal film resistor
R63,64	87-025-154-01	270 Ω 1W Metal film resistor
R49,50	87-025-250-01	0.22 Ω x2 3W Metal film resistor
⚠ R80	87-029-066-01	1.5 Ω 1/2W Fuse resistor
⚠ R71	87-029-109-01	220 Ω 1/2W Fuse resistor
< Capacitors >		
C33,34	82-473-680-01	47 μ F 10V Electrolytic BP
C43,44	87-015-653-01	10000 μ F 40V Electrolytic
« DRIVER CIRCUIT BOARD SECTION »		
PCB-B	82-752-604-01	Driver circuit board (Rch)
PCB-C	82-752-605-01	Driver circuit board (Lch)
Q1,2	89-501-505-01	FET, 2SK150GR
Q3,4	89-309-456-01	Transistor, 2SC945L(P)
Q5,6	89-315-834-01	Transistor, 2SC1583(F)
Q7,8	89-236-316-71	Transistor, 2SC2631RS
Q9,10	89-111-236-71	Transistor, 2SA1123RS
D1,2,5,6	87-027-287-01	Zener diode, WZ-160
D3,4,9,10	87-027-097-01	Diode, 1S1555
D7,8	82-415-637-01	Zener diode, WZ-061
D11~14	87-027-681-01	Diode, SV02
SFR1,2	87-021-559-01	Semi-fixed resistor, 100 Ω -B
< Resistors >		
R25~28	87-025-251-01	1.5k Ω 1W Metal film resistor
R35,36	87-025-078-01	3.3k Ω 1W Metal film resistor
« LED CIRCUIT BOARD SECTION »		
PCB-D	82-752-603-11	LED circuit board
IC4	87-027-635-01	IC, AN6875
D15,16,17,18,22	87-027-097-01	Diode, 1S1555
D23	87-027-416-01	Zener diode, HZ3C2
D24~28	87-027-542-01	Light emitting diode, LN217RP
D32	87-027-543-01	Light emitting diode, LN317GP
SFR3	87-021-615-01	Semi-fixed resistor, 47k Ω -B
PIN-2	87-032-634-01	Pin, 4P
« JACK CIRCUIT BOARD SECTION »		
PCB-E	82-752-606-11	Jack circuit board
Q12	89-206-052-01	Transistor, 2SB605(L)
J1~4,S1	82-752-629-01	Jack ass'y, with/switch (E,K model)
J1,2,S1	82-752-612-01	Jack ass'y, with/switch (G model)
< Capacitor >		
C1,2	87-015-464-01	4.7 μ F 16V Electrolytic BP

Symbol No.	Part No.	Description
« MISCELLANEOUS »		
⚠ T1	82-752-610-01	Power transformer (E model)
⚠ T1	82-752-611-01	Power transformer (K,G model)
⚠ CP1	87-019-105-01	Compound capacitor 0.022 μ F
⚠ F1	87-035-224-01	Fuse, T1.6A
⚠	87-098-018-01	Fuse label, T1.6A
⚠	87-033-161-01	Fuse holder
⚠	87-034-941-01	AC power cord (E model)
⚠	87-034-942-01	AC power cord (K model)
⚠	87-034-892-01	AC power cord (G model)
⚠	87-085-165-01	Cord bushing (G model)
⚠ S4	87-031-563-01	Push-switch (POWER)

⚠ This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.